

**МІНІСТЕРСТВО ОСВІТИ І НАУКИ УКРАЇНИ
СУМСЬКИЙ ДЕРЖАВНИЙ УНІВЕРСИТЕТ
КАФЕДРА ІНОЗЕМНИХ МОВ
ЛІНГВІСТИЧНИЙ НАВЧАЛЬНО-МЕТОДИЧНИЙ ЦЕНТР**

**МАТЕРІАЛИ
VIII МІЖВУЗІВСЬКОЇ НАУКОВО-ПРАКТИЧНОЇ
КОНФЕРЕНЦІЇ
ЛІНГВІСТИЧНОГО НАВЧАЛЬНО-МЕТОДИЧНОГО ЦЕНТРУ
КАФЕДРИ ІНОЗЕМНИХ МОВ**

“TO LIVE IN A SAFER WORLD”

(Суми, 28 березня 2014 року)

The eighth scientific practical student`s, postgraduate`s and teacher`s
LSNC conference

MAGNIFYING TRANSMITTER

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The magnifying transmitter was intended by Nicola Tesla for the wireless transmission of electrical energy. It is a high power harmonic oscillator, an air-core, multiple-resonant transformer that can generate very high voltages. In normal operation the magnifying transmitter is relatively silent, generating a high power electric field, but if the output voltage exceeds the design voltage of the elevated terminal, high-voltage sparks will strike out from the electrode into the air. In his autobiography, Tesla stated that "...I feel certain that of all my inventions, the Magnifying Transmitter will prove most important and valuable to future generations."

In 1899 a larger magnifier was constructed in Colorado Springs, Colorado. This machine was used to conduct fundamental experiments in wireless telecommunications and electrical power transmission. Nicola Tesla demonstrated that Earth behaves as a smooth polished conductor of very low resistance. At Colorado Springs, Tesla used his magnifying transmitter in an attempt to artificially stimulate terrestrial standing waves. Based upon observations made with the device, Tesla reported that earth resonance modes involving an electric current flowing through the earth can be excited. He claimed to have discovered a fundamental earth resonance frequency of nearly 11.78 Hz, which is somewhat higher than the fundamental earth-ionosphere cavity Schumann resonance found to exist by researchers in the 1950s in the general vicinity of 7.3 Hz.

With the help of magnifier Tesla conducted experiments that contributed to our understanding of electromagnetic propagation and the earth electrical resonances. He researched ways to transmit energy wirelessly over long distances, first by transverse waves, and then, possibly, by longitudinal waves. Tesla received patents on wireless transceivers designed to develop terrestrial standing waves. The magnifying transmitter was the basis for Tesla's Wardenclyffe Tower project.